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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,171	06/01/2005	Hiroyuki Sasai	92478-2500	8039

52044 7590 09/10/2008

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EXAMINER	
LI, SHI K	

ART UNIT	PAPER NUMBER
2613	

MAIL DATE	DELIVERY MODE
09/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,171	SASAI, HIROYUKI	
	Examiner	Art Unit	
	Shi K. Li	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2005 and 13 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 13-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 13-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/1/05, 11/27/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species I in the reply filed on 13 June 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chew et al. (U.S. Patent 7,260,330 B2) in view of Official Notice.

Regarding claim 1, Chew et al. teaches in FIG. 4 an optical transmission system comprising an optical transmitter 100, an optical receiver 102 and an optical fiber 117. The optical receiver comprises a correlation modulator for intensity-modulating the received optical signal and an interferometer for splitting the signal into two optical signals one for each photodetector of the dual photodetectors 124. Chew et al. teaches in col. 7, lines 50-57 that the two optical signals are antiphase. Chew et al. teaches a dual detectors for converting the two optical signals into electrical signals and differential amplification on electrical signal (see balance detector of FIG. 2, which is similar to the dual detectors of FIG. 4). The difference between Chew et al. and the claimed invention is that Chew et al. does not teach first and second

optical transmission fibers for connecting the two optical signals to the dual detectors. Official Notice is taken that both the concept and the advantages of using fiber for connecting optical components are well known and expected in the art. It would have been obvious to have included fibers for connecting the outputs of the interferometer and the dual detectors in the optical transmission system of Chew et al. because fibers have low loss, flexible and small in size for conveying optical signals.

Regarding claim 2, Chew et al. teaches in FIG. 4 modulator 112 for receiving electrical signals and converting the electrical signal into an optical signal.

Regarding claim 3, Chew et al. teaches in FIG. 4 modulator 118 for modulating the optical signal.

Regarding claim 4, Chew et al. teaches in col. 7, lines 30-31 Mach-Zehnder modulator.

Regarding claims 13-14, Chew et al. and the Official Notice teach all the limitations of the claim.

Regarding claim 15, Chew et al. teaches in FIG. 4 modulator 118 for modulating the optical signal, interferometer for separating the modulated optical signal.

Regarding claim 16, Chew et al. teaches in col. 7, lines 30-31 Mach-Zehnder modulator.

4. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chew et al. and Official Notice as applied to claims 1-4 and 13-16 above, and further in view of Kuri et al. (U.S. Patent Application Pub. 2003/0198477 A1).

Chew et al. and Official Notice have been discussed above in regard to claims 1-4 and 13-16. The difference between Chew et al. and Official Notice and the claimed invention is that Chew et al. does not teach using oscillators of different frequency in the transmitter and the

receiver. Kuri et al. teaches in FIG. 2 an optical transmission system. Kuri et al. teaches that if the desirable output frequency at the receiver if f_{IF}, a local oscillator of f_{RF} and a local oscillator of $f_{LO/2}$ can be used in the transmitter and the receiver, respectively. Note that the terms RF and IF are used in Kuri et al. to indicate different frequencies and both of them are in the radio frequency range. Similarly, the claim language requires that the frequency of the intermediate frequency is different from a frequency of a radio frequency signal. One of ordinary skill in the art would have been motivated to combine the teaching of Kuri et al. with the modified optical transmission system of Chew et al. because by choosing appropriate frequencies for the modulated signals, certain undesirable effect of the transmission can be avoided. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use different frequencies for modulated signals, as taught by Kuri et al., in the modified optical transmission system of Chew et al. because by choosing appropriate frequencies for the modulated signals, certain undesirable effect of the transmission can be avoided.

5. Claims 6-7 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chew et al. and Official Notice as applied to claims 1-4 and 13-16 above, and further in view of Pua et al. (U.S. Patent 6,647,176 B1).

Chew et al. and Official Notice have been discussed above in regard to claims 1-4 and 13-16. The difference between Chew et al. and Official Notice and the claimed invention is that Chew et al. does not teach a polarization scrambler. Pua et al. teaches in FIG. 1 a transmission system with polarization compensation. FIG. 1 of Pua et al. includes a polarization scrambler for scrambling the state of polarization of the optical signal so that the signal is insensitive to any polarization dependent effects of the fiber 106. One of ordinary skill in the art would have been

motivated to combine the teaching of Pua et al. with the modified optical transmission system of Chew et al. because polarization scrambler scrambling the state of polarization of the optical signal so that the signal is insensitive to any polarization dependent effects of the fiber 106. This makes the polarization compensation effective. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include polarization scrambler, as taught by Pua et al., in the modified optical transmission system of Chew et al. because polarization scrambler scrambling the state of polarization of the optical signal and makes the polarization compensation effective.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (7:30 a.m. - 4:30 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
9 September 2008

/Shi K. Li/
Primary Examiner, Art Unit 2613